

REMARKS

Claims 1-9 and 11-16 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,236,368 to Johnson ("Johnson") in the Office Action dated May 3, 2007 (the "Action"). Claims 1, 11-12 and 17-18 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Applicants appreciate the Examiner's indication that Claim 10 would be allowable if rewritten in independent form. In response, Claim 10 has been rewritten substantially in independent form, excluding the recitations of Claim 1 that were rejected in the Action under 35 U.S.C. 112, first paragraph.

Applicants further note with appreciation that no prior art has been cited against Claims 17-18. Applicants submit that the rejection of Claims 17-18 under 35 U.S.C. 112 has been overcome for the reasons discussed in Section I. below. Therefore, Claims 17-18 are in condition for allowance.

In addition, Claim 15 has been amended to clarify that the first and second ends of the antenna loop include a planar portion configured to directly contact the radio frequency (RF) circuitry and the ground plane of the printed circuit board (PCB). Support for the amendments to Claim 15 can be found, for example, in Figure 2, which illustrates that the planar connections 15a, 15b directly contact the PCB and as described, for example, on page 3, lines 1-3. Claims 19 and 20 are new. Support for Claims 19 and 20 can be found, for example, in Figure 2, which shows that the first and second ends of the antenna loop are connected to the printed circuit board (PCB) at a side thereof that is opposite the ground plane extender (Claim 19) and on page 10, lines 3-6 (Claim 20). Independent Claims 1, 11 and 12 have been amended to clarify that "the ground plane extender is a separate piece and spaced apart a distance from the ground plane."

Applicants respectfully traverse the rejections for the reasons that follow.

I. Claims 1, 11-12 and 17-18 satisfy the requirements of 35 U.S.C. 112

The Action takes the position that Claims 1, 11-12 and 17-18 contain subject matter that was not described in the specification. Applicants respectfully disagree.

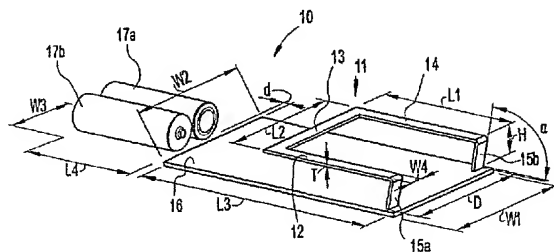
With respect to the introduction of new matter under § 112, the M.P.E.P. 2163.07(a) states as follows (emphasis added):

By disclosing in a patent application a device that inherently performs a function or has a property, operates according to a theory or has an advantage, a patent application necessarily discloses that function, theory or advantage, even though it says nothing explicitly concerning it. The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter. *In re Reynolds*, 443 F.2d 384, 170 USPQ 94 (CCPA 1971); *In re Smythe*, 480 F.2d 1376, 178 USPQ 279 (CCPA 1973).

The M.P.E.P. 2163.07 also states as follows (emphasis added):

Mere rephrasing of a passage does not constitute new matter. Accordingly, a rewording of a passage where the same meaning remains intact is permissible. *In re Anderson*, 471 F.2d 1237, 176 USPQ 331 (CCPA 1973).

In particular, the Action states that with respect to Claims 1 and 11-12, the limitation that the ground plane extender is a separate piece from the ground plane is not supported in the specification. However, as noted in the Amendment dated March 30, 2007, support for such claims can be found, for example, on page 9, lines 10-33 and in Figures 2, 3 and 4. Page 9, lines 15-21 states that the ground plane extender can be provided by the batteries 17a, 17b, which will act as an extension of the PCB 16. Figure 2 is reproduced below.



apart a distance (d) from the PCB 16. Because this property of the device is clearly shown, for example, in Figures 2, 3 and 4, this feature is fully disclosed and supported by the original specification as filed and may be added to the claims without introducing new matter.

The Action provides no specific rationale for the rejection of Claims 17-18 under 35 U.S.C. 112, first paragraph. Claim 17 states that the ground plane extender is not in direct contact with the ground plane of the printed circuit board (PCB). The specification states on page 9, lines 10-21 that the batteries can function as the ground plane extender. The specification further states on page 9, lines 25-26, that “the batteries 17a, 17b, 27a, 27b, 37a, 37b are not directly connected to the ground plane of the PCB 16, 26, 36.” Claim 18 recites that the ground plane extender and the ground plane of the printed circuit board (PCB) together form an extended ground plane that is larger than the ground plane of the printed circuit board (PCB). The specification states on page 9, lines 26-27: “they [the batteries] will act together with the ground plane of the PCB to form an extended ground plane, which is larger than the actual ground plane of the PCB.” In addition, the features of Claims 17 and 18 are shown, for example, in Figures 2, 3 and 4. Accordingly, the subject matter of Claims 17 and 18 is shown in the device(s) of Figures 2, 3 and 4 and also discussed in specific text in the specification. The minor rephrasing of the text of the specification is clearly permissible under M.P.E.P. 2163.07. Therefore the subject matter of Claims 17 and 18 is fully disclosed and supported by the original specification as filed and may be added to the claims without introducing new matter.

For at least the reasons discussed above, Applicants submit that Claims 1, 11-12 and 17-18 comply with the written description requirement and Applicants request that the rejections under 35 U.S.C. 112 be withdrawn.

II. Claims 1-9 and 11-16 are patentable over Johson

A. Independent Claims 1, 11 and 12

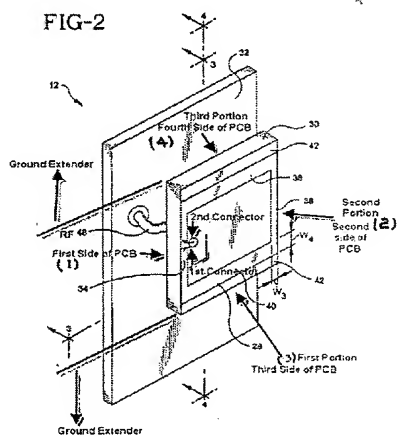
Independent Claim 1 recites an antenna device for a portable device including:

an antenna loop of conducting material having first and second ends connected to a radio frequency (RF) circuitry and a ground

plane of a printed circuit board (PCB), respectively, the antenna loop being positioned opposite the ground plane; and a ground plane extender positioned at a first side of the PCB and in a longitudinal extension of the ground plane, wherein the ground plane extender is a separate piece and spaced apart a distance from the ground plane.

Applicants submit that at least the above-underlined features recited in Claim 1 are not disclosed by Johson. Independent Claims 11 and 12 include recitations similar to the above-underlined features.

In response to Applicants' arguments filed in Applicant's paper dated March 30, 2007, the Action notes that the recitation that "the ground plane extender is a separate piece from the ground plane" is rejected as new subject matter under 35 U.S.C. 112, first paragraph. *See* the Action , page 7 and page 9. As noted above, this recitation is not new subject matter, and Applicants submit that the ground plane extender identified in **Figure 2** of Johson on page 4 of the Action (reproduced below with the Examiner's notations) is clearly not "a separate piece and spaced apart a distance from the ground plane" as recited in independent Claims 1, 11 and 12. To the extent that Johson is relied on in any subsequent Official Action as allegedly disclosing a ground plane extender that is a separate piece and spaced apart a distance from the ground plane, Applicants respectfully request that specific portions of Johson being relied on be identified.



In addition, Claims 1, 11 and 12 recite that first and second ends are connected to a radio frequency (RF) circuitry and a ground plane of a printed circuit board (PCB), respectively. The Action takes the position on page 9 that the ends of the antenna in Johson are

connected to a radio frequency circuitry (RF coax line [48]) and a ground plane (32) of the PCB (20) (having the radio frequency [48] connected between the loop antenna [28] at the first and second connectors and the printed circuit board [20] in order for receiving or transmitting signals between the circuit board in the antenna).

However, as clearly shown, for example, in **Figures 4 and 10** of Johson, the coax cable 48 does not connect the ends of the antenna 28 to the ground plane 32. **Figures 4 and 10** of Johson are reproduced below.

As is shown in **Figures 4 and 10** of Johson, the feed point connections 44, 46 connect to the coax cable 48. The cable 48 then passes through the printed circuit board 32 without forming a connection. Moreover, Johson states that the feed point connections 44, 46 connect to the transmitter electronics. See Johson, col. 4, lines 9-11 (referring to **Figure 4**). Therefore, Johson does not teach or suggest first and second ends of an antenna that are connected to a radio frequency (RF) circuitry and a ground plane of a printed circuit board (PCB), respectively as recited in Claims 1, 11 and 12.

FIG-4

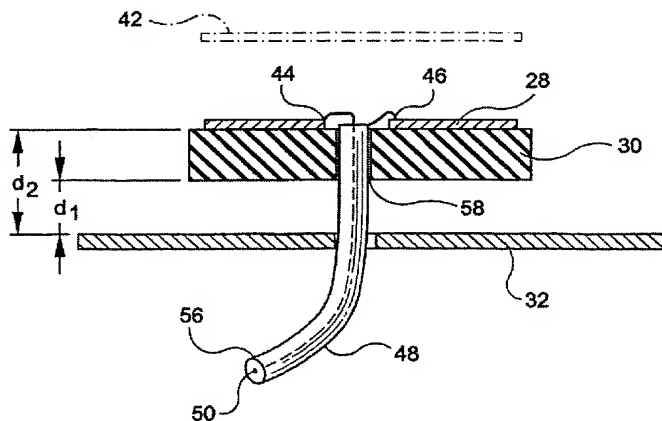
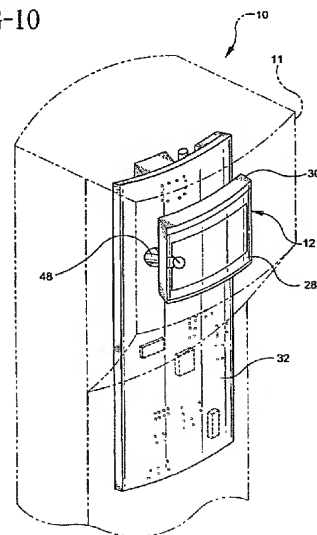


FIG-10



For at least these reasons, Johson does not teach or suggest all of the recitations of Claim 1 and cannot anticipate or render obvious Claim 1. Claims 11 and 12 contain recitations similar to Claim 1 and are patentable for at least for the reasons discussed with respect to Claim 1. Claims 2-9 and 13-20 are patentable at least per the patentability of the claims from which they depend.

In addition, Claims 13 and 15-20 are separately patentable for at least the following reasons.

B. Claim 13 is separately patentable over Johson.

Claim 13 recites that the device is a headset. Exemplary headset dimensions are disclosed on page 11 of the current specification. In response to Applicants' argument that a cellular telephone is typically much larger than a headset and noting that the portions of Johson cited in the Action merely discusses a hand-held radio frequency transceiver (such as a cellular telephone or PCS device), the Action states, "a hand-held [device], a headset, a telephone, or a cellular [device] is a telecommunication device." However, Claim 13 does not recite a telecommunications device or a hand-held device. Claim 13 recites a headset, which is not disclosed by Johson as required under Section 102.

Therefore, Applicants submit that Claim 13 is separately patentable for at least these reasons, and Applicants request an indication of same.

C. Claim 15 is separately patentable over Johson.

Claim 15 recites that the first and second ends of the antenna loop comprise a planar portion configured to directly contact the radio frequency (RF) circuitry and the ground plane of the printed circuit board (PCB). The Action takes the position on page 7 that Johson discloses a planar portion on the first side of the PCB. However, to the extent that Johson discloses a planar portion, it is not configured to directly contact the radio frequency circuitry or the ground plane of the printed circuit board as recited in Claim 15. As shown in Johson,

the ends of the loop connector element **28** are connected to the coax cable **48** by wire feed point connections **44, 46** (See **Figure 4**).

Therefore, Claim 15 is separately patentable over Johson for at least these reasons, and Applicants respectfully request an indication of same.

D. Claim 16 is separately patentable over Johson.

Claim 16 recites that the first and second ends of the antenna loop are directly connected to the radio frequency (RF) circuitry and the ground plane of the printed circuit board (PCB). The Action states on page 8 that "Johson discloses that the antenna loop (**28**) are [sic] directly connected to the radio frequency (RF) circuitry (**48**) and the ground plane (**32**) of the printed circuit board (**figure 2**)" and does not address Applicants' arguments submitted in the Response of March 30, 2007. In particular, Applicant's paper of March 30, 2007 noted that element **48** is clearly identified in Johson as a coax cable **48**, and the loop connector element **28** of Johson is connected to feed point connections **44, 46**, which are in turn connected to a coax cable **48**. Applicants have not located any direct connection between the antenna loop **28** and any radio frequency (RF) circuitry is shown in Johson. If Johson is relied on in any subsequent Official Action, Applicants respectfully request that the specific portions of Johson be pointed out and the rational for an alleged disclosure of a direct connection be identified.

Therefore, Claim 16 is separately patentable over Johson for at least these reasons, and Applicants respectfully request an indication of same.

E. Claims 17-18 are separately patentable over Johson.

As noted above, no prior art has been cited against Claims 17-18. The rejections under 35 U.S.C. 112 of Claims 17-18 have been overcome for the reasons discussed in Section I. above. Therefore, Claims 17-18 are separately patentable over Johson for at least these reasons, and Applicants respectfully request an indication of same.

F. Claims 19-20 are separately patentable over Johson.

Claims 19-20 are new. Claim 19 recites that the first and second ends of the antenna loop are connected to the printed circuit board (PCB) at a second side thereof that is opposite the first side of the PCB and the ground plane extender. Claim 20 recites that the distance between the ground plane extender and the ground plane is about 1 mm. Applicants submit that these features are not disclosed or rendered obvious by Johson. Therefore, Claims 17-18 are separately patentable over Johson for at least these reasons, and Applicants respectfully request an indication of same.

CONCLUSION

Accordingly, Applicant submits that the present application is in condition for allowance and the same is earnestly solicited. Should the Examiner have any matters outstanding of resolution, he is encouraged to telephone the undersigned at 919-854-1400 for expeditious handling.

Respectfully submitted,

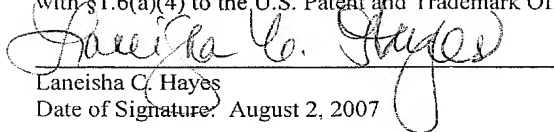


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CERTIFICATION OF TRANSMISSION

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Laneisha C. Hayes
Date of Signature: August 2, 2007